

Patent Claims

1. Surface coated hard material with a hardness ($HV_{0.2}$) ≥ 10 GPa, the surface of which has a polysiloxane coating.

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2. Surface coated hard material as defined in Claim 1, characterized in that the hardness ($HV_{0.2}$) > 15 Gpa.

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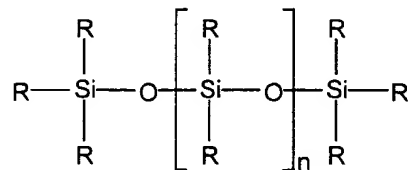
3. Surface coated hard material as defined in Claim 1 or Claim 2, characterized in that aluminum oxide is the basis of the hard material.

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4. Surface coated hard material as defined in Claim 3, characterized in that the basis of the hard material consists of electro-corundum, monocrystalline corundum, sintered corundum, sintered alumina and/or calcined alumina, or mixtures of these.

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5. Surface coated hard material as defined in one of the Claims 1 to 4, characterized in that the surface of the hard material is coated with a polysiloxane of the formula:



6. Surface coated hard material as defined in Claim 5,
characterized in that the R radical is hydrogen, an alkyl and/or
phenyl group.

5 7. Surface coated hard material as defined in Claim 5,
characterized in that n is an integer between 1 and 100.

8. Surface coated hard material as defined in one of the
Claims 5 to 7, characterized in that the R radical is
preferably a methyl group.

10 9. Surface coated hard material as defined in ^{Class 1} ~~one of the~~
~~Claims 1 to 8~~, characterized in that the quantity of
polysiloxane on its surface amounts to 0.001 to 10%-wt
relative to the hard material that is used.

15 10. Surface coated hard material as defined in Claim 9,
characterized in that the quantity of polysiloxane amounts
to 0.01 to 5%-wt.

20 11. Surface coated hard material as defined in Claim 9,
characterized in that it is preferred that the quantity of
polysiloxane amount to 0.1 to 1.5%-wt.

25 12. Method for producing a hard material as defined on ^{Class 1} ~~one of~~
~~the Claims 1 to 11~~, characterized in that a hard material

grain is mixed with a polysiloxane, a polysiloxane emulsion, or a diluted polysiloxane emulsion.

5 13. Method as defined in Claim 12, characterized in that the hard grain is subjected to a heat treatment in a temperature range between 100°C and 600°C prior to the mixing process.

10 14. Method as defined in Claim 12 or Claim 13, characterized in that once coated with polysiloxane the hard grain is dried in a temperature range between 100°C and 400°C.

15 15. Method as defined in Claim 14, characterized in that the drying temperature is between 100°C and 200°C.

16. Method as defined in ~~one of the Claims 12 to 15,~~ ^{Claim 12} characterized in that an aqueous polysiloxane emulsion is used.

20 17. Method as defined in ~~one of the Claims 12 to 16,~~ ^{Claim 12} characterized in that the viscosity of the polysiloxane, the polysiloxane emulsion, or the diluted polysiloxane emulsion that is used is below 1500 mPa*s.

25 18. Method as defined in Claim 17, characterized in that the viscosity of the polysiloxane, the polysiloxane emulsion,

or the diluted polysiloxane emulsion that is used is below
1000 mPa*s.

19. Use of a hard material as defined in ~~one of the Claims 1 to~~ ^{Claim 1}
5 ~~11~~ as a wear-reducing agent in lacquer coatings based on
phenol, melamine, aldehyde, urea, formaldehyde, epoxy,
polyester, ^{and} ~~and/or~~ polyurethane resins.

20. Use of a hard material as defined in ~~one of the Claims 1 to~~ ^{Claim 1}
10 ~~11~~ as a wear-reducing agent in transparent overlay papers
to manufacture wear-resistant lacquer coatings.